

IN THE CLAIMS

1. (Currently Amended) A method comprising:

~~permitting a thread to be interrupted during a first critical region;~~
~~interrupting [[the]] a thread with an interrupt routine during a first critical region; and~~
~~selectively setting the thread to restart at a beginning of the first critical region in~~
~~response to an indication that the thread is working in a critical region, wherein the thread is to~~
~~avoid disabling all interrupts before it enters the first critical region and avoid re-enabling the~~
~~interrupts after exiting the first critical region.~~
2. (Original) The method of Claim 1, wherein the setting the thread to start at the beginning of the first critical region comprises:

setting a stack pointer and program counter so that the interrupted thread restarts at the beginning of the first critical region.
3. (Currently Amended) The method of Claim 1, wherein the first critical region includes the acts of:

selectively incrementing a count of a number of times the first critical region has been interrupted in response to the first critical region having been previously interrupted; and
selectively saving program stack conditions of the interrupted thread in response to the thread not having been interrupted during the first critical region more than a maximum permitted number of times.
4. (Original) The method of Claim 3, wherein the first critical region further includes the acts of:

setting a flag to indicate that a critical region is entered;
performing critical region interrupt recovery work in response to an indication that the first critical region was previously interrupted; and
attempting to complete first critical region work.
5. (Original) The method of Claim 4, wherein the critical region interrupt recovery work corrects errors that arise from previously interrupting the first critical region prior to its completion.
6. (Currently Amended) The method of Claim 4, wherein the first critical region further includes the acts of:

~~selectively~~ setting a flag to indicate that critical region work is not being performed in response to the critical region work completing; and

setting to zero the count of the number of times the first critical region was interrupted.

7. (Original) The method of Claim 1 further comprising:

marking the thread as having been interrupted during the first critical region.

8. (Original) The method of Claim 1, further comprising indicating that the thread is not operating in a critical region.

9. (Currently Amended) A method comprising:

interrupting permitting a thread ~~to be interrupted~~ during a first critical region;

~~selectively~~ incrementing a count of a number of times the first critical region has been interrupted in response to the first critical region having been previously interrupted; and

~~selectively~~ saving program stack conditions of the interrupted thread in response to the thread not having been interrupted during the first critical region more than a maximum permitted number of times, wherein the thread is to avoid disabling all interrupts before it enters the first critical region and avoid re-enabling the interrupts after exiting the first critical region.

10. (Currently Amended) The method of Claim 9, further comprising:

setting a flag to indicate that a critical region is entered;

~~selectively~~ performing critical region interrupt recovery work in response to an indication that the first critical region was previously interrupted; and

clearing a flag indicating the first critical region was previously interrupted.

11. (Original) The method of Claim 10, wherein the critical region interrupt recovery work corrects errors that arise from previously interrupting the first critical region prior to its completion.

12. (Original) The method of Claim 10, further comprising:

commencing work in the first critical region.

13. (Currently Amended) The method of Claim 12, further comprising:

~~selectively~~ setting a flag to indicate that critical region work is not being performed in response to the critical region work completing; and

resetting a counter of times the first critical region was interrupted to zero.

14. (Currently Amended) The method of Claim 9, further comprising:
setting a flag to indicate that a critical region is entered; and
~~selectively~~ commencing work in the first critical region in response to an indication that the first critical region was not previously interrupted.
15. (Currently Amended) The method of Claim 14, further comprising:
~~selectively~~ setting a flag to indicate that critical region work is not being performed in response to the critical region work completing; and
resetting a counter of times the first critical region was interrupted to zero.
16. (Currently Amended) A method comprising:
~~selectively~~ disabling interrupts of a critical region in response to the critical region having been interrupted more than a permitted number of times; and
commencing critical region work, wherein the thread is to avoid disabling all interrupts before it enters the first critical region and avoid re-enabling all interrupts after exiting the first critical region.
17. (Currently Amended) The method of Claim 16, further comprising:
~~selectively~~ setting a flag to indicate that critical region work is not being performed in response to the critical region work completing;
~~selectively~~ resetting a counter of times the critical region was interrupted to zero in response to the critical region work completing; and
re-enabling interrupts of the critical region.
18. (Currently Amended) A method comprising:
interrupting permitting a critical region ~~to be interrupted~~; and
~~selectively~~ saving stack conditions of an interrupted critical region in response to the critical region not having been previously interrupted, wherein a thread that is interrupted is to avoid disabling all interrupts before it enters the first critical region and avoid re-enabling the interrupts after exiting the first critical region.
19. (Original) The method of Claim 18, further comprising:
commencing work in the critical region.

20. (Currently Amended) The method of Claim 19, further comprising:
- ~~selectively~~ setting a flag to indicate that critical region work is not being performed in response to the critical region work completing; and
- ~~selectively~~ resetting a counter of times the critical region was interrupted to zero in response to the critical region work completing.
21. (Currently Amended) An article comprising a storage medium, the storage medium comprising machine readable instructions stored thereon to:
- interrupt permit a thread ~~to be interrupted~~ during a first critical region ;
- ~~interrupt the thread~~ with an interrupt routine; and
- ~~selectively~~ set the thread to restart at a beginning of the first critical region in response to an indication that the thread operates in a critical region, wherein the thread is to avoid disabling all interrupts before it enters the first critical region and avoid re-enabling the interrupts after exiting the first critical region.
22. (Original) The article of Claim 21, wherein the instructions to set the thread to restart at the beginning of the first critical region comprises instructions to:
- set a stack pointer and program counter so that the interrupted thread restarts at the beginning of the first critical region.
23. (Currently Amended) The article of Claim 21, wherein the first critical region includes instructions to:
- ~~selectively~~ increment a count of a number of times the first critical region has been interrupted in response to the first critical region having been previously interrupted; and
- ~~selectively~~ save program stack conditions of the interrupted thread in response to the thread not having been interrupted during the first critical region more than a maximum permitted number of times.
24. (Original) The article of Claim 23, wherein the first critical region further includes instructions to:
- set a flag to indicate that a critical region is entered;
- perform critical region interrupt recovery work in response to an indication that the first critical region was previously interrupted; and

attempt to complete first critical region work.

25. (Original) The article of Claim 24, wherein the critical region interrupt recovery work includes instructions to correct errors that arise from previously interrupting the first critical region prior to its completion.

26. (Currently Amended) The article of Claim 24, wherein the first critical region further includes instructions to:

~~selectively~~ set a flag to indicate that critical region work is not being performed in response to the critical region work completing; and

set to zero the count of the number of times the first critical region was interrupted.

27. (Original) The article of Claim 21 further comprising instructions to mark the thread as having been interrupted during the first critical region.

28. (Original) The article of Claim 21, further comprising instructions to indicate that the thread is not operating in a critical region.

29. (Currently Amended) An apparatus comprising:

an I/O controller device comprising a processor and a memory device, the I/O controller device comprising logic to:

~~interrupt permit~~ a thread ~~to be interrupted~~ during a first critical region ;

~~interrupt the thread~~ with an interrupt routine; and

~~selectively~~ set the thread to restart at a beginning of the first critical region in response to an indication that the thread operates in a critical region, wherein the thread is to avoid disabling all interrupts before it enters the first critical region and avoid re-enabling the interrupts after exiting the first critical region.

30. (Original) The apparatus of Claim 29, wherein the logic to set the thread to restart at the beginning of the first critical region comprises logic to:

set a stack pointer and program counter so that the interrupted thread restarts at the beginning of the first critical region.

31. (Currently Amended) The apparatus of Claim 29, wherein the first critical region includes logic to:

selectively increment a count of a number of times the first critical region has been interrupted in response to the first critical region having been previously interrupted; and

selectively save program stack conditions of the interrupted thread in response to the thread not having been interrupted during the first critical region more than a maximum permitted number of times.

32. (Original) The apparatus of Claim 31, wherein the first critical region further includes logic to:

set a flag to indicate that a critical region is entered;

perform critical region interrupt recovery work in response to an indication that the first critical region was previously interrupted; and

attempt to complete first critical region work.

33. (Original) The apparatus of Claim 32, wherein the critical region interrupt recovery work includes logic to correct errors that arise from previously interrupting the first critical region prior to its completion.

34. (Currently Amended) The apparatus of Claim 32, wherein the first critical region further includes logic to:

selectively set a flag to indicate that critical region work is not being performed in response to the critical region work completing; and

set to zero the count of the number of times the first critical region was interrupted.

35. (Original) The apparatus of Claim 29 further comprising logic to mark the thread as having been interrupted during the first critical region.

36. (Original) The apparatus of Claim 29, further comprising logic to indicate that the thread is not operating in a critical region.

37. (Currently Amended) A system comprising:

a first storage subsystem and a second storage subsystem;

a first circuit card including first circuitry capable of being coupled to the first storage subsystem, wherein the first circuitry further includes an I/O controller device, the I/O controller device comprising:

a processor;

a memory device, wherein the memory device includes code segments that instruct the processor to:

~~interrupt permit~~ a thread ~~to be interrupted~~ during a first critical region;

~~interrupt the thread~~ with an interrupt routine, and

~~selectively~~ set the thread to restart at a beginning of the first critical region in response to an indication that the thread operates in a critical region; and

a second circuit card including second circuitry capable of being coupled to the second storage subsystem, wherein the thread is to avoid disabling all interrupts before it enters the first critical region and avoid re-enabling the interrupts after exiting the first critical region.

38. (Original) The system of Claim 37, wherein the second circuit includes an I/O controller device.

39. (Original) The system of Claim 37, wherein the first storage subsystem and the second storage subsystem each comprise one or more respective mass storage devices.

40. (Original) The system of claim 37, wherein:

the first storage subsystem comprises a redundant array of inexpensive disks (RAID); and
the second storage subsystem comprises a tape mass storage system.

41. (Original) The system of claim 37, further comprising:

a circuit board coupled to the bus, wherein the circuit board comprising a bus, memory, and a host processor; and

the first circuit card and the second circuit card are capable of being coupled to the bus.

42. (Original) The system of Claim 41, wherein the bus complies with PCI.